REMARKS

Reconsideration and allowance of this application are respectfully requested. Claims 1, 17 and 22 have been amended. Support for the amended claims can be found in the specification on page 34, line 10 to page 35, line 23. Claim 2 has been cancelled. Claims 1 and 3-22 are now pending in the application. The rejections are respectfully submitted to be obviated in view of the amendments and remarks presented herein.

Rejection Under 35 U.S.C. § 102(b) - Ohmori et al.

Claims 1, 3, 4, 20 and 22 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Ohmori et al. (U.S. Patent Number 6,122,237; hereinafter "Ohmori"). The rejection is respectfully traversed.

Regarding claim 1, Applicants' invention relates to a tilt servo control device of an information recording/reproducing apparatus comprising a recording medium type determining device, a tilt drive signal generator, a tilt angle adjuster, and a driver. The recording medium type determining device determines a type of optical recording medium. The tilt drive signal generator generates a tilt drive signal so as to reduce a tilt angle between a normal to a recording surface of the optical recording medium at a position of a laser beam irradiating the recording surface and an optical axis of the laser beam by a method for generating a tilt drive signal corresponding to the type determined by the recording medium type determining device. The tilt angle adjuster adjusts the tilt angle, and the driver drives the tilt angle adjuster in accordance with the tilt drive signal. The tilt angle adjuster includes a liquid crystal panel having a plurality of regions arranged in an optical system of the information recording/reproducing apparatus.

The driver "drives each of said plurality of regions of said liquid crystal panel in accordance with said tilt drive signal so that the tilt angle is optimized when said laser beam is irradiated into either a pre-write section or an embossed section of the optical recording medium," as claimed.

Turning to the cited art, Ohmori teaches a disk drive apparatus that provides for a positional relationship between an optical disk and an optical pickup device to set in a predetermined initial state before an information recording and reproducing operation. As shown in Figures 8 and 9 of Ohmori, the disk drive apparatus includes: a disk table (149) that is rotated by a spindle motor and onto which an optical disk D is loaded; an optical pickup device (142) for recording and reproducing information on and from the optical disk; a skew sensor (183) for detecting the inclination of a light beam's optical axis relative to the optical disk; a skew control mechanism (160, 161) for adjusting the inclination; a reference portion detected by the skew sensor; and control means (a skew motor drive unit (216), a system controller (230), and a servo processor (231)). The control means sets the skew control mechanism in its predetermined initial state based on an output from the skew sensor obtained from detection of the reference portion.

As shown in Figure 10 of Ohmori, in step S10, the system controller (230) determines whether or not the optical disk D presently loaded onto the disk table (149) is a standard-density disk Ds (or a high-density disk Dh) based on information recorded in the TOC area on the optical disk D. If the optical disk D is a high-density disk Dh, the skew adjustment mechanism (160, 161) is operated to perform the skew adjustment in step S12. If the optical disk is a standard-

density disk, the skew adjustment mechanism (160, 161) is stopped and the skew adjusting is not carried out in step S11.

The skew adjusting in Ohmori is not performed during data reproduction in step S13 if the optical disk is a standard-density disk. The control means also does not generate a skew drive signal for driving the skew adjustment mechanism (160, 161) at a position of a laser beam irradiating a recording surface of the optical disk during data reproduction if the optical disk is a standard-density disk. Further, Ohmori does not teach a plurality of skew drive signal generating methods for different type disks. Therefore, Ohmori does not teach or suggest at least "a tilt drive signal generator for generating a tilt drive signal so as to reduce a tilt angle between a normal to the recording surface of said optical recording medium at a position of said laser beam irradiating said recording surface and an optical axis of said laser beam by a method for generating a tilt drive signal corresponding to the type determined by said recording medium type determining device," as claimed.

Additionally, there is no mention in Ohmori of driving each of a plurality of regions of a liquid crystal panel "in accordance with said tilt drive signal so that the tilt angle is optimized when said laser beam is irradiated into either a pre-write section or an embossed section of the optical recording medium," as claimed. At least by virtue of the aforementioned differences, Applicants' claimed invention patentably distinguishes over Ohmori. Applicants' claims 3, 4 and 20 are dependent claims including all of the limitations of independent claim 1, which, as established above, distinguishes over Ohmori. Therefore, Ohmori does not anticipate claims 3, 4 and 20 for at least the aforementioned reasons as well as for their additionally recited features.

Reconsideration and withdrawal of the rejection of claims 1, 3, 4 and 20 under 35 U.S.C. § 102(b) are respectfully requested.

Regarding claim 22, Applicants' claimed invention relates to a tilt servo control method. Claim 22 is a corresponding method claim to independent apparatus claim 1, which, as established above, distinguishes over Ohmori. Applicants' claimed invention is allowable over Ohmori for the same reasons as discussed above. Reconsideration and withdrawal of the rejection of claim 22 under 35 U.S.C. § 102(b) are respectfully requested.

Rejection Under 35 U.S.C. § 102(b) - Tokushuku et al.

Claims 1 and 22 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Tokushuku et al. (U.S. Patent Number 5,539,710; "Tokushuku"). The rejection is respectfully traversed.

Regarding claim 1, Applicants' invention relates to a tilt servo control device as described above. Tokushuku teaches an optical disk system as shown in Figure 5 having a tilt sensor (30) for detecting tilt of an optical disk (29) and a tilt control circuit (31) for controlling the laser beam projection angle of an optical head (35) in accordance with the tilt of the optical disk (29). Tokushuku discloses a tilt sensor (45) as shown in Figure 6, connected to a tilt error signal amplifier circuit (50) of the tilt control circuit (31) and a reflectance detection circuit (46). The tilt sensor (45) includes a light emitting diode (LED) and two photodiodes (PDs). When the optical disk is tilted or slanted, the intensities of the light reaching the respective PDs differ, thereby producing a tilt error signal. A tilt motor is controlled so as to minimize the error signal, whereby the optical head (35) is brought to its optimum position. The reflectance detection

circuit (46) identifies the type of optical disk by adding the outputs of the two PDs of the tilt sensor (45) with a differential amplifier (47), and comparing the output of the differential amplifier (47) with a reference voltage (49) in a comparator (48).

However, Tokushuku does not teach or suggest that a tilt drive signal generating method of the tilt control circuit (31) (or system controller (33)) is changed in accordance with the type of optical disk. Although Tokushuku discloses that the circuit (31) is changed over for each of the two types of optical disk (column 9, lines 6-7), there is no mention of changing a tilt drive signal generating method.

Additionally, Tokushuku teaches in Figure 10 that tilt offset of tilt control circuit (31) is changed in accordance with the type of optical disk, and if necessary, the gain of a tilt error signal amplifier circuit (83) also is changed over. However, Tokushuku does not mention changing a tilt drive signal method in accordance with the type of optical disk.

Therefore, Tokushuku does not teach or suggest at least "a tilt drive signal generator for generating a tilt drive signal so as to reduce a tilt angle between a normal to the recording surface of said optical recording medium at a position of said laser beam irradiating said recording surface and an optical axis of said laser beam by a method for generating a tilt drive signal corresponding to the type determined by said recording medium type determining device," as claimed.

Additionally, there is no mention in Tokushuku of driving each of a plurality of regions of a liquid crystal panel "in accordance with said tilt drive signal so that the tilt angle is optimized when said laser beam is irradiated into either a pre-write section or an embossed

section of the optical recording medium," as claimed. At least by virtue of the aforementioned differences, Applicants' claimed invention patentably distinguishes over Tokushuku. Reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 102(b) are respectfully requested.

Regarding claim 22, Applicants' claimed invention is allowable over Tokushuku for the same reasons as discussed above. Reconsideration and withdrawal of the rejection of claim 22 under 35 U.S.C. § 102(b) are respectfully requested.

Rejection Under 35 U.S.C. § 103(a) - Tokushuku et al. in view of Ogasawara

Claim 2 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Tokushuku in view of Ogasawara (U.S. Patent Number 6,141,304). Although claim 2 is cancelled by this Amendment, claim 1 has been amended to include elements previously recited in claim 2.

As discussed above, Tokushuku does not teach or suggest a tilt servo control device as recited in claim 1.

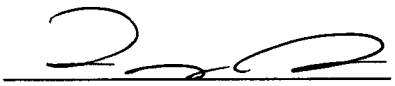
Ogasawara discloses an optical pickup having a liquid crystal panel (3) in an optical system for tilt control. However, Ogasawara does not remedy the deficiencies of Tokushuku, nor does Ogasawara teach or suggest that the liquid crystal panel (3) is driven in the tilt control so that a tilt angle is optimized when a laser beam is irradiated into either a pre-write section or an embossed section of an optical recording medium. Applicants' claim 1 recites that "said driver drives each of said plurality of regions of said liquid crystal panel in accordance with said tilt drive signal so that the tilt angle is optimized when said laser beam is irradiated into either a

pre-write section or an embossed section of the optical recording medium." At least by virtue of the aforementioned differences, the invention defined by Applicants' claim 1 is patentable over Tokushuku in view of Ogasawara.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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